



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

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January 8, 1997

MEMORANDUM TO: Whitmel H. Webb, III, P. E.  
Manager Program Development Branch

FROM: David Modlin, P. E.  
Feasibility Studies Unit Head

SUBJECT: Proposed Intersection Improvements,  
NC 54, NC 751 and SR 1116  
Durham County  
FS 31-96-005

The Feasibility Studies Unit was asked to investigate potential improvements for the intersection area involving NC 54, NC 751 and SR 1116 (Garrett Road) in the southwest part of Durham (See Figure 1). The proximity of existing signals at NC 54 / NC 751 and NC 751 / SR 1116, the high volume of left turns, and the lack of storage for turning traffic cause this area to function at a less than desirable level of service.

The Durham Thoroughfare Plan and Division 5 staff propose an improvement that realigns NC 54 with SR 1116 (See Figure 2). This would also call for a cul-de-sac of the existing westbound leg of NC 54 at NC 751. Exhaustive capacity analyses were prepared by the Traffic Engineering Branch for all possible alternatives, including this proposed improvement.

Improvements to the intersection area alone will not solve the current problem, nor address the demands that will be presented by estimated future traffic volumes. This intersection will fail unless more wide scale improvements to NC 54, NC 751 and SR 1116 are considered. During the course of this investigation, approval for yet another significant commercial development was sought for the property in the southwest quadrant of the NC 54 / NC 751 intersection.

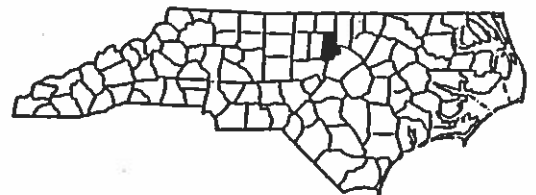
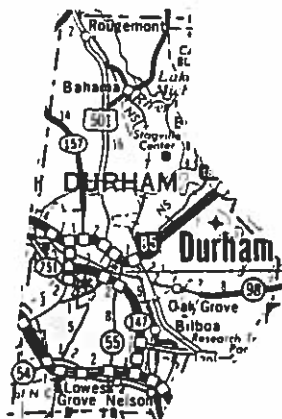
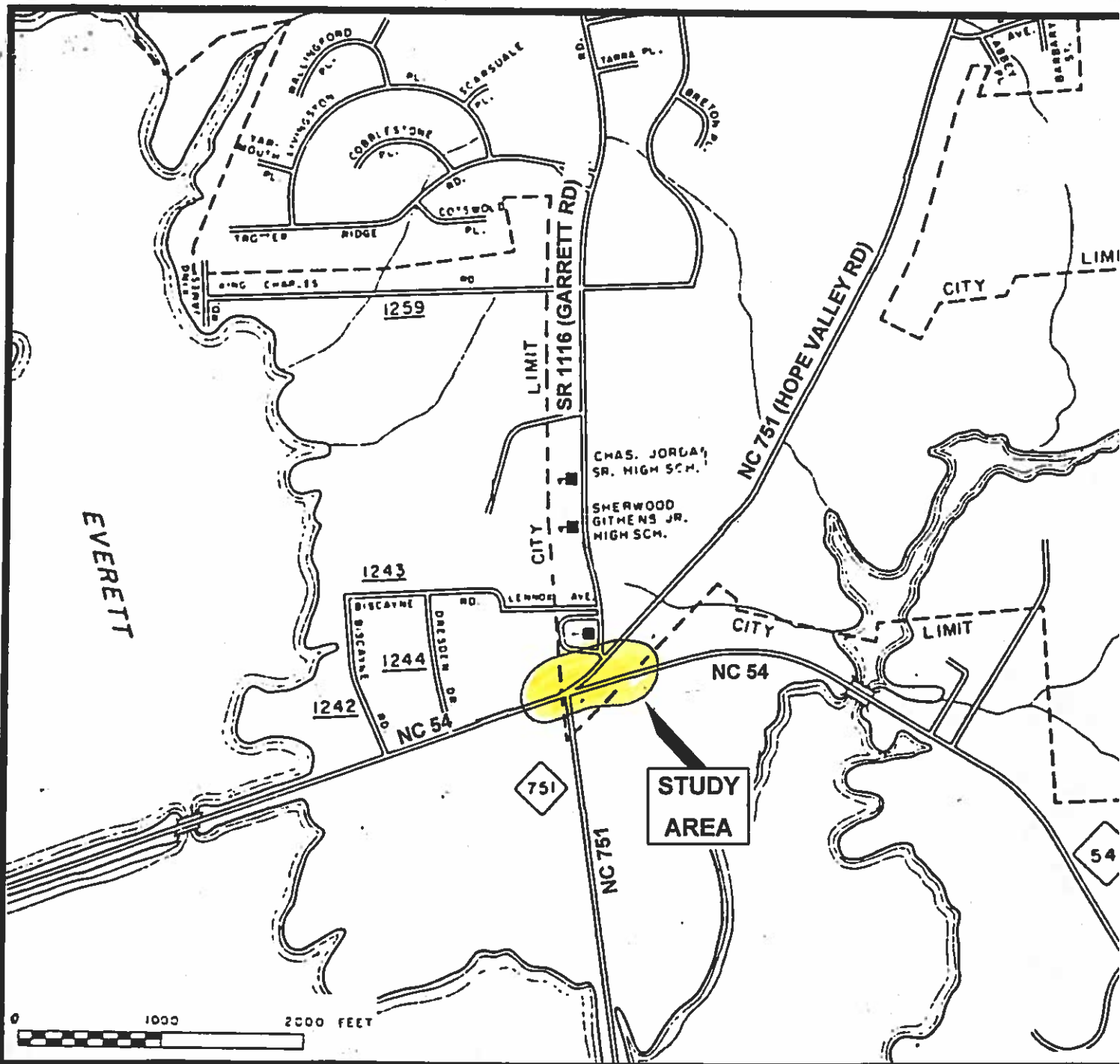
From March , 1993, through February , 1996, there were 72 accidents within this intersection area. There were no fatal accidents. The predominant accident



types were Rear End and Left Turn. Forty three (43) percent of the total accidents involved a left turning vehicle.

To further complicate and exacerbate the problems being experienced, NC 751, SR 1116 and NC 54 west are all included in the Durham Bicycle Master Plan Map. SR 1116 and NC 751 just north of the intersection are rated respectively as a "Busy Through Route" and a "Touring Route."

To emphasize the completeness of the evaluation of this area, the existing and projected traffic volumes along with the summary capacity analyses are attached. This intersection area can only be made to work with additional lanes on all the approach roadways.



North Carolina Department of Transportation  
Program Development Branch

**FS 31-96-005**

Durham

Proposed Intersection Improvements  
NC 54, NC 751 and SR 1116  
Durham County

DIVISION 5

FIGURE 1

